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**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Implement the Commission's Procurement Incentive Framework and to Examine the Integration of Greenhouse Gas Emissions Standards into Procurement Policies.

Rulemaking 06-04-009  
(Filed April 13, 2006)

**THE CENTER FOR ENERGY AND ECONOMIC DEVELOPMENT'S**  
**OPENING COMMENTS ON FINAL WORKSHOP REPORT**

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Dated: **October 18, 2006**

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Pursuant to the Assigned Commissioner's Ruling: Phase 1 Amended Scoping Memo and Request for Comments on Final Staff Recommendations (the "Final Proposal"), the Center for Energy and Economic Development ("CEED") respectfully submits its Opening Comments regarding the Phase I Emissions Performance Standard ("EPS") Final Workshop Report. In addition to and in support of these Comments, CEED refers to and incorporates by reference its previously-filed Comments, including its Pre-Workshop Comments filed June 12, 2006, its Opening Brief on Jurisdictional and Other Legal Issues filed June 30, 2006, its Reply Brief on Jurisdictional and Other Legal Issues filed July 11, 2006, and its Comments on the Draft Workshop Report ("Draft Report") and the documents submitted therewith filed September 8, 2006.

**A.**  
**INTRODUCTION**

CEED is a non-profit organization formed by the nation's coal-producing companies, railroads, a number of electric utilities, equipment manufacturers, and related organizations for the purpose of educating the public, including public-sector decision-makers, about the benefits of affordable, reliable, and environmentally compatible coal-fueled electricity. CEED has several member-companies who are doing business in both California and in neighboring western states. CEED has participated in previous California Public Utilities Commission ("CPUC") Workshops regarding CPUC's proposed implementation of a Greenhouse Gas ("GHG") emissions cap, participated in the June 21-23 Workshop in this proceeding, and has

participated in California Energy Commission (“CEC”) public hearings on climate and clean coal technology issues. CEED also submitted detailed comments to Governor Schwarzenegger’s Climate Action Team (“CAT”).

As discussed below, CEED believes that the Final Proposal does not meet several EPS program design goals. The Final Proposal (1) sets an unrealistically low GHG emissions standard (even for Combined Cycle Gas Turbine (“CCGT”)<sup>1</sup> generation), (2) eliminates cost containment measures to protect ratepayers, (3) increases California’s already high dependence on natural gas to supply its power needs, (4) prohibits a large portion of California’s existing out-of-state power suppliers from competing in baseload California power markets, and (5) eliminates or creates disincentives for continued development of cleaner coal-fueled electric generation. Moreover, the updated staff proposal contained in the Final Proposal violates provisions of the U.S. Constitution, including the Commerce Clause.

The Commission should not impose the Final Proposal without significant revision, or at a minimum, additional analysis of the proposal’s costs.

## **B. ARGUMENT**

### **A. THE FINAL PROPOSAL FAILS TO MEET, AND CONFLICTS WITH, SEVERAL STATED DESIGN GOALS OF THE PHASE I EPS RULEMAKING.**

Following the Workshop on the Phase I EPS design held June 21-23, 2006, the Commission developed a list of consensus design goals for the EPS process. The list of design goals for the proposed EPS include (1) minimizing costs to ratepayers; (2) addressing reliability concerns; and (3) encouraging (as well as not hindering) advanced technology development. *See* Final Proposal at 43; *see also* Draft Report at 68. As noted in the EVA Technical Evaluation (attached as Exhibit 1 to CEED’s September 8, 2006 Comments on the Draft Workshop Report), the Final Proposal contains no analysis or discussion of costs to the ratepayer, nor does it contain

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<sup>1</sup> CCGT technology is alternatively referred to as Natural Gas Combined Cycle (“NGCC”) in these comments and in the incorporated EVA Technical Evaluation.

any analysis of the reliability concerns raised by homogenizing California's energy supply to rely upon natural gas.<sup>2</sup>

The [Final Proposal] attempts to address reliability concerns by allowing reliability exemptions on a case-by-case basis, but misses the much larger policy issue created by eliminating most new resource options and forcing the state to become increasingly dependent upon natural gas. At the minimum, the Draft Report should contain a discussion of anticipated compliance costs and reliability impacts and how (if at all) the proposed approach minimizes ratepayer costs and risks.

EVA Technical Evaluation at 3-4 (emphasis in original); *see* reference to Final Proposal at 45, § 5(h)).

**i. The Final Proposal Eliminates Cost Containment Measures that Would Minimize the Costs of the EPS to California Ratepayers.**

One of the design goals recognized by the Commission is to minimize costs of the EPS to California ratepayers. The California General Assembly set out the same goal in S.B. 1368. S.B. 1368 § (1)(d) (“Energy Action Plan II establishes a policy that the state will rely on clean and efficient fossil fuel fired generation and will ‘encourage the development of cost-effective, highly-efficient, and environmentally-sound supply resources to provide reliability and consistency with the state’s energy priorities.’”); *id.* at § (1)(g) (“It is vital . . . to reduce California’s exposure to costs associated with future federal regulation of these emissions.”); *id.* at § 8341(e)(7) (“In adopting and implementing the greenhouse gases emission performance standard, the Energy Commission, in consultation with the Independent System Operator, shall consider the effects of the standard on system reliability and overall costs to electricity customers.”)

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<sup>2</sup> The EVA Technical Report was prepared in response to the Draft Workshop Report, and is equally applicable to the Final Proposal. Where appropriate, the references to the Draft Report have been modified to refer to the identical language of the Final Proposal.

By eliminating all cost containment provisions from the EPS, and in failing to address the costs to ratepayers, the Final Proposal neglects its obligation to protect ratepayers from the costs of the EPS. As the EVA Technical Report states:

The California legislature and governor have expressed interest in controlling compliance costs to minimize impacts on the state economy in both SB 1368 and AB 32. SB 1368 specifically requires the Energy Commission to consider the ratepayer costs in its development and implementation of a GHG emission standard (Section 8341(d)(6), Section 8341(e)(7)). This was reiterated in AB 32 that requires that the state agencies establish a GHG emissions cap “in an efficient and cost-effective manner.” (Section 38561(a))

To provide the flexibility needed to be “efficient and cost effective,” AB 32 authorizes use of “alternative compliance mechanisms” that allow offsets to provide for an equivalent reduction in greenhouse gases. AB 32 also permits the state to establish a GHG cap & trade system. At the minimum, the commission should follow the governor’s and legislature’s lead on cost containment measures and permit offsets and portfolio averaging. The proposal should also establish carbon price caps to protect the California ratepayer.

EVA Technical Evaluation at 4-5 (emphasis in original). A.B. 32 specifically refers to the use of offsets as a mechanism for reducing system costs of compliance, and such a program should be applied to the EPS as well.

The EVA Technical Evaluation reaches the same conclusion, and proposes three potential methods to mitigate the cost risk to California ratepayers:

**Emission offsets:** Gives an economic incentive to businesses capable of reducing/capturing CO<sub>2</sub> in a cost effective manner, but otherwise have no reason to do so. Most existing state CO<sub>2</sub> control programs permit companies with higher emitting alternatives the flexibility to use purchased carbon offsets for compliance. Overall, the decreased carbon emissions from qualifying offset programs in combination with power source emissions will result in the same net emissions to the environment as a qualifying source (as defined by current draft staff proposal). This cost-containment measure would ensure the reduction targets are met in

a cost-effective manner, while expanding supplier competition. The Draft Report currently prohibits such use of offsets.

**Portfolio averaging:** Portfolio averaging also provides needed flexibility to control costs by averaging emissions across multiple diverse facilities to comply with the environmental performance standard. This option would encourage companies to invest in zero emitting technology options (e.g. nuclear, renewable) to offset their cheaper, but higher carbon emitting, technologies. Overall, with portfolio averaging, there would be no net emission change to the environment while allowing the suppliers flexibility to offer a lower-priced product. Currently the Draft Report recommendation would prohibit portfolio averaging.

**Price caps:** The only true method to protect the ratepayer would be to establish a price cap for CO<sub>2</sub> emissions. This approach is commonly applied in state renewable portfolio standards when they set a maximum price premium. A price cap approach is also applied in new power plant CO<sub>2</sub> control programs in Massachusetts (\$1/ton CO<sub>2</sub>), Oregon (\$0.85/ton CO<sub>2</sub>) and Washington (\$1.60/metric ton carbon). Several congressional GHG control proposals (e.g. Climate and Economy Insurance Act of 2005) have also contained carbon price caps. The California draft proposal contains no price caps. The governor and state legislature in recent legislation that cost is an important issue. The Draft Report should address how much California ratepayers should be willing to pay to avoid CO<sub>2</sub> emissions and that would not adversely affect the state economy. To assure that this price is not exceeded, the Commission should set a price cap at or below this level.

EVA Technical Evaluation at 5-6 (footnotes omitted).

As an additional cost containment provision, the Final Proposal should include an exemption for utilities with small service territories in California. As S.B. 1368 provides, “[a]n electrical corporation that provides electric service to 75,000 or fewer retail end-use customers in California may file with the commission a proposal for alternative compliance with this section . . . .” S.B. 1368, § 8341(d)(9); *see also* EVA Technical Evaluation at 6.

Several methods exist to build cost controls into the proposed EPS. Incorporating such methods allows the Final Proposal to comply with the stated design goal – and the statutory mandate – to minimize costs of the EPS to California ratepayers.

**ii. The Displacement of Coal-Fueled Electric Generation Will Harm California's Economy, and Will Disproportionately Impact Lower-Income California Families.**

The higher electricity rates resulting from the Final Proposal standard will have the same effect as a regressive tax. Higher energy prices disproportionately affect families living on lower and fixed incomes.<sup>3</sup> Thus, everyone in society has a stake in keeping energy costs affordable. More money spent on electricity means less money is available for housing, food, education, and other necessities that improve quality of life. Therefore, it is an unwise and unjust policy to raise energy prices so that consumers use less.

*1. Rose & Wei Research: The Displacement of Coal-Fueled Electric Generation Will Negatively Impact California's Economic Output, Household Income, and Jobs.*

Adam Z. Rose, Ph.D., and Dan Wei<sup>4</sup> conducted research to estimate the economic impacts of displacing coal-fueled electricity generation. *See* Rose & Wei Paper (Attachment 5 to CEED's September 8, 2006 Comments on the Draft Workshop Report); *see also* Summary of same (Attachment 4 to CEED's September 8, 2006 Comments on the Draft Workshop Report); Supporting Data (Attachment 6 to CEED's September 8, 2006 Comments on the Draft Workshop Report); and Balanced Energy Report (Attachment 7 to CEED's September 8, 2006 Comments on the Draft Workshop Report). Dr. Rose and Mr. Wei calculated that U.S. coal-fueled electric generation will contribute \$1.05 trillion in gross economic output, \$362 billion in annual household incomes, and 6.8 million jobs in 2015. *See* Rose & Wei Paper at 4. Based

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<sup>3</sup> In 2005, energy costs accounted for only 5% of the gross incomes of families with household incomes of greater than \$50,000. In the same year, energy costs consumed 48% of the budgets of U.S. families with incomes of less than \$10,000. *See* EVA Technical Evaluation at 16-18; Balanced Energy Report (Attachment 7 to CEED's September 8, 2006 Comments on the Draft Workshop Report) at 1-6.

<sup>4</sup> Dr. Rose is Professor of Energy, Environmental, and Regional Economics at the Pennsylvania State University. Mr. Wei is a Graduate Assistant at the same university.

upon these calculations, Dr. Rose and Mr. Wei concluded that displacement of 33% of coal-fueled electric generation (nationwide) would result in a loss of \$166 billion in gross economic output, a \$64 billion reduction in annual household incomes, and 1.2 million job losses. *Id.* at 5. But the report further calculated the net economic losses of such displacement of coal-fueled electric generation in California alone. *See* Summary of Rose & Wei Paper at 8-9 (Attachment 4). A 33% displacement of coal-fueled electric generation would result in a \$10 billion net loss in economic output, \$4.1 billion in lost household income, and 65,300 lost jobs in California. A 66% displacement would cost California \$22.9 billion in lost economic output, \$9.3 billion in lost household income, and 148,300 lost jobs. These losses illustrate the interdependence of major segments of the economy, and show that the Final Proposal's EPS cannot be judged in terms of expected environmental effects alone. The additional effects of the proposed EPS must be assessed by the Commission before implementing an EPS.

2. *Brenner Research: Higher-Cost Energy Results in Reduced Household Income, Increased Unemployment, and Premature Death*

M. Harvey Brenner, Ph.D.,<sup>5</sup> conducted research regarding the relationship between energy, the environment, and health. *See* Brenner Article (Attachment 3 to CEED's September 8, 2006 Comments on the Draft Workshop Report); *see also* Summary of same (Attachment 2 to CEED's September 8, 2006 Comments on the Draft Workshop Report). After applying his econometric model of public health to a hypothetical scenario in which higher-cost fuels displace U.S. coal to generate electricity (like the Final Proposal will do for California), Dr. Brenner discovered that such displacement will result in staggering adverse impacts, including reduced household income, increased unemployment, and premature deaths. *See* Brenner Article at 30 (Table 1). Such premature deaths are directly attributable to "decreased household income and increased unemployment associated with a shift to higher cost energy supply options, absent any direct mitigation programs that effectively prevented or offset these effects." *Id.* at 32. By increasing the costs of goods and services such as electricity, and, in doing so, reducing

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<sup>5</sup> Dr. Brenner is Professor of Health and Policy Management at the Johns Hopkins University Bloomberg School of Public Health and Senior Professor of Epidemiology at the Berlin University of Technology.



disposable income, government regulation can inadvertently harm individuals' socioeconomic status and contribute to poor health and premature death. *Id.* at 28.

Dr. Brenner's caution to public policy makers applies directly to the Commission here: "Governmental programs intended to protect public health and the environment should take into account potential income and employment effects of required compliance measures." *Id.* In short,

[t]he economic growth that continuously improves human life expectancy requires access to affordable energy. In this fundamental sense, any policy change that reduces growth or raises the level of unemployment should therefore be defined and addressed as a public health issue requiring an economic policy response that limits or offsets these results.

*Id.* at 33. Dr. Brenner's research cautions the Commission to recognize the costs and potential unintended consequences that the proposed EPS will have on employment, income, and public health.

**iii. The Final Proposal Increases California's Dependence on Natural Gas to Supply Its Power Needs.**

The Final Proposal's 1,100 lb CO<sub>2</sub>/MWh emission performance standard precludes all power plants that use oil, coal, petroleum coke, and most waste fuels from supplying baseload power to California investor-owned utilities. Any generation derived from higher carbon content fuels, such as petroleum coke, coal, waste fuels, and oil, face "impossible technology hurdles since such facilities must offset their higher fuel carbon content without any energy efficiency advantage (often a disadvantage)" when judged based upon the proposed CCGT standard. EVA Technical Evaluation at 6-7. No coal or other carbon chain fuel (including natural gas, in some instances) can meet the proposed CO<sub>2</sub> performance limit of 1,100 lbs CO<sub>2</sub>/MWh. *Id.* at 7.

**iv. The Final Proposal Results in Greater Vulnerability to Natural Gas Market Reliability Risks.**

Power plants that use oil, clean coal, petroleum coke, and most waste fuels are precluded from supplying baseload power to California investor-owned utilities under the Final Proposal. By limiting baseload generation competition in this way, the Final Proposal leaves California

with fewer and higher-cost baseload generation options. Moreover, as the EVA Technical Evaluation observes:

Given the [] proposal[s] limitations, the CEC Net System emission average for unspecified resource contracts would likely exceed the EPS limit. The CEC calculation would include older fossil fuel plants and plants using longer carbon chain fuels may be far above the [1,100 lb/MWh] limit that would likewise yield a system average much greater than 1,500 lb CO<sub>2</sub>/MWh. In summary, the [] proposal, as written, would prohibit California utilities from signing any long-term unspecified resource contracts.

EVA Technical Evaluation at 15.

When coal, oil, petroleum coke, waste fuel, older CCGT, and unspecified generation options are excluded from baseload California power contracts, utilities must depend upon additional new CCGT plants, nuclear units, and renewable resources to meet California's growing energy demand. *Id.* If California is reluctant to support nuclear power, it is left with little diversity in its energy portfolio – only natural gas and renewable energy options.

The North American Electric Reliability Council ("NERC") 2006 Long-Term Reliability Assessment plainly recognizes this flaw in California's resource adequacy and diversity assessment, stating that:

California is highly reliant on gas-fired generation and has very little alternate fuel capability for these plants. California is also highly reliant on natural gas imports so gas supply is of concern to area energy planners, including the California Energy Commission. The Commission's September 21, 2005 Energy Action Plan II Implementation Roadmap For Energy Policies identifies eight key actions to address natural gas supply, demand, and infrastructure.

NERC 2006 Long-Term Reliability Assessment, October 16, 2006, at 120, *available at* [ftp://www.nerc.com/pub/sys/all\\_updl/docs/pubs/LTRA2006.pdf](ftp://www.nerc.com/pub/sys/all_updl/docs/pubs/LTRA2006.pdf) (citing the Energy Action Plan II report, *available at* [http://www.energy.ca.gov/energy\\_action\\_plan/2005-09-21\\_EAP2\\_FINAL.PDF](http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF)).

A portfolio of limited energy sources is inherently a high-risk portfolio, and the Final Proposal creates unjustifiably high supply and market risks for California ratepayers. *Id.* Given the volatility of natural gas prices, as well as the higher cost of natural gas, the proposed EPS places California ratepayers in an inherently risky position. *See* Balanced Energy Report (Attachment 7 to CEED’s September 8, 2006 Comments on the Draft Workshop Report) at 3-4 (Charts 1 and 2 – electricity fuel cost indices by energy source).

NERC’s 2006 Long-Term Reliability Assessment Report analyzes the adequacy of electricity supply and transmission reliability in North America through 2015, and the report calls for actions to improve system reliability. NERC 2006 Long-Term Reliability Assessment at 6-10. NERC expects demand for electricity to increase over the next ten years by nineteen percent in the U.S., but expects confirmed power capacity to increase by only six percent. *Id.* at 11-14. Accordingly, capacity margins are projected to drop below minimum target levels in the western U.S. *Id.* In Western Electricity Coordinating Council (“WECC”) territory specifically, “[d]ue to a slight decrease in existing generating capacity and a significant decrease in reported generation additions, capacity margins . . . are reported as declining throughout the ten-year assessment period.” *Id.* at 19. NERC predicts summer electricity supply shortages relative to study planning margins as early as 2009 assuming no resource additions beyond those presently under active construction. *Id.* Such drops alert NERC to the increased potential for shortages in electricity due to fuel disruptions, particularly for natural gas: “The supply and delivery of gas to electric generators can be disrupted when electric generation demands for gas coincide with high gas demands for other customers. In some cases, even firm gas contracts for electric generation can be curtailed in favor of residential heating needs during extreme cold weather.” *Id.* at 9. By shifting California’s energy portfolio to natural gas – the reallocation of resources that the Final Proposal will cause – California places itself in a position of increased system reliability risk, and instead of increasing system capacity as NERC recommends, is taking action which will serve to reduce available system capacity.

Further, heavy reliance upon renewable energy options is currently a high-risk and unrealistic option for California:

First, it is unlikely that renewable energy can meet this large demand without a significant price impacts. Renewable power has been and continues to be far more expensive than convention generation options.

The California Public Utility Commission (CPUC) report entitled *Achieving a 33% Renewable Energy Target* (November 2005) failed to study the resource availability and cost impact of the combination of California expanded renewable demand with other western state demand triggered by their renewable portfolio standards. Four western states (Arizona, Colorado, New Mexico, Nevada) have also adopted renewable portfolio requirements totaling 20 TWh by 2020 that plan to draw upon these same renewable resources. Other western states are also considering adopting similar standards that would push demand above 140 TWh. How much renewable resources can be developed and at what cost?

CPUC's analysis assumed that most of this increased renewable energy demand would be supplied by wind projects. To meet this demand, the CPUC report assumes that the wind capacity factors will increase from 37 percent today to 43 percent by 2017. However, according to EIA Form 906 data, only one California wind project and eight in the entire nation report such a high capacity factor. In fact, the average 2003 California capacity factor was less than 23%, so the CPUC projection may vastly overestimate both current and future potential wind power contribution and significantly underestimate the wind production cost. A GHG performance standard would make wind a larger player in the energy market, a role wind technology does not appear ready to play.

Secondly, wind can also contribute to system reliability issues. In a recent article in *Power Markets Week*, the California ISO provided data for the July 2006 energy crunch in California. During this critical period, wind power operated at less than 5 percent of its rated capacity at peak demand periods. This makes wind a highly unreliable source during critical high peak periods when power is needed the most.

EVA Technical Evaluation at 15-16.

**v. The Final Proposal Sets a Standard That Even CCGT Facilities Cannot Meet.**

The stated intent of the EPS is to capture California's baseload generation using a capacity factor greater than 60%. *See* Final Proposal at 44; *see also* Draft Report at 35. The EVA Technical Evaluation presents, at Table 1, the data reported on EIA Form 906 by in-state California facilities with a 2005 capacity factor greater than 60%. *See* EVA Technical Evaluation at 9. From these data, it appears likely that all but three facilities will be in violation of the EPS. No facilities using longer chain carbon fuels currently meet the proposed standard, and only three of fourteen combined cycle facilities are in compliance. The Final Proposal advances an unrealistic standard that many existing and future CCGT plants will be unable to achieve.

As the EVA Technical Evaluation notes, the proposed emissions limit may also prohibit future baseload contracts with natural gas combined cycle applications (1) located in higher elevations, (2) using air-cooled technologies, or (3) using older, less energy efficient combined cycle generation technologies. EVA Technical Evaluation at 7. By prohibiting less energy efficient CCGT applications, the staff standard would come in direct conflict with the provisions of the recently adopted S.B. 1368. S.B. 1368, § 8341(d)(1) ("All combined-cycle natural gas powerplants that are in operation, or that have an Energy Commission final permit decision to operate as of June 30, 2007, shall be deemed to be in compliance with the greenhouse gases emission performance standard.") The Final Proposal's emissions standard must be raised to include all existing CCGT applications (in-state and out-of-state) located in high elevations, using air-cooled technologies and using older combined cycle generation technologies. *See id.*; EVA Technical Evaluation at 7.

**vi. The Final Proposal Hinders Advanced Clean Coal Technology Development.**

A stated design goal for the proposed EPS has been the encouragement of advanced technology development. *See* Draft Report at 68. Curiously, this previously stated goal is removed from the Final Proposal in apparent contradiction with a stated goal of S.B. 1368 and the Energy Action Plan II. S.B. 1368 § 1(d) ("Energy Action Plan II establishes a policy that the

state will . . . ‘encourage the development of cost-effective, highly-efficient, and environmentally-sound supply resources . . .’”). But the Final Proposal does retain the Draft Report’s case-by-case research and development facility exemption. *See* Final Proposal at 45; *see also* Draft Report at 36. The case-by-case exemption requires suppliers to demonstrate that the commitment would make a significant future contribution towards developing a lower-emitting resource mix, an administratively burdensome review process that more likely will discourage and hinder such advanced technology development.

[CPUC’s goal of encouraging advanced technology] would be better achieved if some predefined R&D projects such as carbon capture ready [Integrated Gasification Combined Cycle (“IGCC”)] projects and ultra-supercritical pulverized coal units that provide potentially low CO<sub>2</sub> options were automatically exempted from the EPS and not subject to an expensive or drawn out approval process. Projects such as the Xcel Pawnee (PRB fired IGCC plant with carbon capture) and AEP Hempstead (PRB fired ultra-supercritical plant) projects should be encouraged.

Not only would the approval process be burdensome, but the qualification criteria may also be too restrictive as contained in the Draft Report’s illustrative example on page 22 [*see also* Final Proposal at 27]. In its description of a qualifying facility, the staff suggests that only an IGCC plant with equal to or better heat rate efficiency than average IGCC plants should be eligible for an R&D exemption. If this average is calculated based upon the existing bituminous coal demonstration units, it is highly unlikely that any IGCC plant using the higher moisture sub-bituminous western coals could ever qualify for an exemption because of their higher moisture penalty. Carbon capture processes would also reduce plant efficiency. *If the example criterion were applied, California would not support either an IGCC or ultra-supercritical plant like Pawnee or Hempstead. In summary, California may discourage the very plants that it seeks to encourage.*

EVA Technical Evaluation at 14 (emphasis in original). A case-by-case exemption discourages investment in advanced technologies due to the uncertainty of the review process. If certain advanced technologies were pre-approved by rule, the Commission would encourage investment in advanced technologies.

Advanced technologies should be encouraged by the EPS, and investment in new technologies will only be encouraged if the Commission dispenses with a burdensome, case-by-case administrative review in favor of pre-approval for carbon capture ready Integrated Gasification Combined Cycle projects and ultra-supercritical pulverized coal units. As Governor Schwarzenegger appropriately put it in a speech announcing a hydrogen power plant fueled by hydrogen generated from petroleum coke:

I want to thank you for choosing California. This will be the first plant of its kind in the whole country and I think it is a perfect fit for our state. With our Strategic Growth Plan, a commitment to Air Quality, *and innovative projects* like this hydrogen plant, I know we can have clear skies, improve our quality of life and build a stronger, more vibrant economy for California.

Governor Schwarzenegger, Address at Carson, California Project Announcement (February 10, 2006) (quoted in Press Release, BP Global, *BP and Edison Mission Group Plan Major Hydrogen Power Project for California* (February 10, 2006) (*available at* <http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7014858>)) (emphasis added).

## **B. THE COMMISSION’S SETTING OF A LOAD-BASED GHG EMISSIONS PERFORMANCE STANDARD VIOLATES THE COMMERCE CLAUSE OF THE U.S. CONSTITUTION**

The Final Proposal effectively precludes coal, oil, petroleum coke, waste fuel, and even older natural gas fueled generation from competition in California power markets. The proposal plainly “blocks the flow” of such generation at the California border, and in doing so, violates the Commerce Clause of the U.S. Constitution.

### **i. Carbon Capture and Sequestration Technology Is Not Yet Sufficiently Developed to Allow Fossil-Fueled Generation to Meet the Proposed GHG Emissions Standard.**

Currently, no cost-effective technology exists to allow CO<sub>2</sub> capture from flue gas streams and to store or sell the captured product. On the contrary, current CO<sub>2</sub> capture and sequestration technology options are both highly energy intensive and far too expensive to be commercially implemented in order to satisfy the proposed EPS.

There are only four powerplants in the U.S. that capture a small portion of CO<sub>2</sub> from their flue gas streams. . . . These facilities were designed to treat less than 15 percent of their flue gas, and these facilities consume large quantities of energy in the process. Based upon their current performance, EVA calculates that to treat 100 percent of the flue gas would require roughly 75 percent of the plant's total output energy. However, to capture only the amount of CO<sub>2</sub> needed to meet a gas combined cycle emission rate (per MWh unit output basis) would consume roughly 63 percent of the plant output energy. Cost to capture and compress CO<sub>2</sub> would increase the production cost of coal-based electricity using conventional PC and CFB technologies by 184 percent. To treat the coal-fired generation currently coming-in to California alone would cost more than \$5 billion/year. This would be far greater than the undocumented and arbitrary Climate Action Team (CAT) \$117 million estimate. Such costs would make the higher carbon containing fuel alternatives far more costly than nuclear power and gas combined cycle alternatives that do not incur the carbon penalty.

EVA Technical Evaluation at 8, 10 (footnotes omitted).

Some utilities have proposed the development of “carbon capture ready” IGCC facilities<sup>6</sup>. *See id.* at 10. The U.S. Department of Energy (“DOE”) hopes to improve the energy efficiency and performance of carbon capture and sequestration technologies for coal-based alternatives, such as those technologies proposed in DOE’s FutureGen project. *See id.* at 11. But, while such technologies are promising, their CO<sub>2</sub> removal abilities are currently modest, and years of intensive research remain before such technologies are commercially feasible. *Id.* Because no technology currently exists to allow fossil-fueled generation to meet the proposed GHG emissions standard, the Final Proposal blocks such generation from entering California.

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<sup>6</sup> For example, Xcel Energy’s Pawnee facility. Such facilities seek to remove CO<sub>2</sub> from syngas before combustion for a far lower price than the flue gas capture approaches currently available.



**ii. The Final Proposal Will Preclude Out-of-State Suppliers from Competing in California's Markets.**

California is currently the largest power importing state in the nation.<sup>7</sup> With its mix of mostly higher cost generating resources, few in-state power plants (mostly nuclear and co-generator facilities) operate at or above the Final Proposal's 60 percent baseload capacity factor. EVA Technical Evaluation at 11. California has turned to much cheaper power imports to supply a large portion of its baseload power needs.<sup>8</sup> Because the 60 percent capacity factor exempts the majority of California's in-state generators from the EPS, the reality of California's energy market dictates that the Final Proposal will primarily preclude out-of-state suppliers from competing in California markets.

Under the [Final] [P]roposal, import power suppliers would need to demonstrate compliance with the proposed EPS to be eligible to compete for future baseload California power contracts. The proposed eligibility criterion would exclude a large portion of the existing import power suppliers from being able to compete for future California baseload power contracts. First, it would prohibit all coal-fired powerplants because of coal's much higher carbon content and lower energy efficiency (than combined cycle). Second, it would also exclude all natural gas and oil fired steam generating units (higher carbon content, lower efficiency) from competition. Such exclusions would significantly inhibit all future inter-state power trading . . . .

EVA Technical Evaluation at 12.

**iii. The Final Proposal Violates the Commerce Clause of the U.S. Constitution.**

The U.S. Supreme Court has stated that "where simple economic protectionism is effected by state legislation, a virtually *per se* rule of invalidity has been erected. The clearest example of such legislation is a law that overtly blocks the flow of interstate commerce at a State's borders." *City of Philadelphia v. New Jersey*, 437 U.S. 617, 624 (1978) (internal

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<sup>7</sup> In 2005, the state reported retail sales of 254 TWh versus in-state generation of only 196 GWh (Source: DOE Electric Power Monthly March 2006).

<sup>8</sup> California ISO Summer 2006 forecast (May 2006).

citations omitted) (state may not ban importation of solid waste while allowing disposal of in-state waste). The U.S. Supreme Court finds it equally clear that electric power raises interstate commerce concerns: “it is difficult to conceive of a more basic element of interstate commerce than electric energy, a product used in virtually every home and commercial or manufacturing facility.”<sup>9</sup> “A state cannot block imports from other states, nor exports from within its boundaries, without offending the Constitution.”<sup>10</sup> CPUC’s EPS will necessarily limit the amount of coal-fueled electricity imported into California, and accordingly, the EPS discriminates against interstate commerce.<sup>11</sup> As Decision 06-02-032, Opinion on Procurement Incentives Framework, dated Feb. 16, 2006 (the “Order”) itself concedes, “non-California generators . . . must adjust their behavior” to comply with CPUC’s GHG cap.<sup>12</sup>

In *Pike v. Bruce Church*, 397 U.S. 137 (1970), the Supreme Court articulated the balancing test used to determine whether state laws and regulations are valid under the Commerce Clause:

Where the statute regulates evenhandedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.... If a legitimate local purpose is found, then the question becomes one of degree. And the extent of the burden that will be tolerated will of course depend on the nature of the local interest involved, and on whether it could be promoted as well with a lesser impact on interstate activities.

*Id.* at 142 (internal citations omitted).

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<sup>9</sup> *Federal Energy Regulatory Comm’n v. Mississippi*, 456 U.S. 742, 757 (1982).

<sup>10</sup> *City of Philadelphia v. New Jersey*, *supra*, 437 U.S. at 620.

<sup>11</sup> Yvonne Gross, “Kyoto, Congress, or Bust: The Constitutional Invalidity of State CO<sub>2</sub> Cap-and-Trade Programs,” manuscript at 19, Thomas Jefferson Law Review, Vol. 28, No. 205, 2005 Available at SSRN: <http://ssrn.com/abstract=883687>.

<sup>12</sup> Order at 23.

1.      *The Performance Standard Has a Discriminatory Effect on Interstate Commerce.*

Various U.S. Supreme Court decisions have struck down regulatory enactments that required particular economic activity to be performed within the jurisdiction.<sup>13</sup> The discrimination in each of these cases was based on geographic origin. In each case, the regulating jurisdiction (state, county, or city) drew a line around itself and treated those inside the line more favorably than those outside the line. These arrangements are protectionist, either in purpose or practical effect, and amount to virtually *per se* discrimination.

Under the proposed EPS, the ability of out-of-state coal-fueled generation plants to export their electricity into California will be severely limited, if not foreclosed altogether. The limitation of CO<sub>2</sub> emissions described by CPUC effectively precludes in-state utilities and other load-serving entities from the purchase and importation of coal-fueled generation. The EPS, and the cap to follow, discriminate against coal-fueled energy in interstate commerce, and accordingly, offend the Commerce Clause of the U.S. Constitution.

In example, in *United States v. Wrightwood Dairy Co.*, 315 U.S. 110 (1942), the Supreme Court held that, because milk produced and sold wholly within a state competes with and impacts the price of milk shipped in from out-of-state, the U.S. Department of Agriculture properly regulates the pricing of milk produced and sold wholly within a state. Like the milk at issue in *Wrightwood Dairy*, electricity generated in other states competes with electricity generated in California. Limiting California's ability to include coal-fueled generation in energy procurement discriminates against the interstate trade of electric generation, and in doing so, depresses the price of electricity in the exporting state by reducing the level of demand it might otherwise satisfy, thereby imposing a burden on out-of-state generators.<sup>14</sup>

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<sup>13</sup> See, e.g., *Dean Milk Co. v. Madison*, 340 U.S. 349 (1951) (unconstitutional for city to require milk to be pasteurized within five miles of the city); *Fort Gratiot Sanitary Landfill, Inc. v. Michigan Dept. of Natural Resources*, 504 U.S. 353 (1992) (unconstitutional for county to prevent a landfill owner from accepting for disposal solid waste produced outside of the county); *Minnesota v. Barber*, 136 U.S. 313 (1890) (unconstitutional for state to require meat sold within the state to be examined by state inspector); *Foster- Fountain Packing Co. v. Haydel*, 278 U.S. 1 (1928) (unconstitutional for state to require that shrimp heads and hulls must be removed before shrimp can be removed from the state); *South-Central Timber Development, Inc. v. Wunnicke*, 467 U.S. 82 (1984) (unconstitutional for state to require all timber to be processed within the state prior to export).

<sup>14</sup> Gross, *supra* note 12, manuscript at 20.

Moreover, by closing off the California market, CPUC's announced EPS and GHG cap places heightened financial burdens on the construction of new coal-fueled power plants in neighboring states. The initial capital required to construct a power plant is typically secured with pre-construction contracts for the output of the unit. If California is effectively closed to coal-fueled power due to the EPS, reduced potential market breadth makes securing financing for construction of new coal-fueled power plants in all Western states more difficult. In obtaining financing for new construction, California-based electric generators have a significant competitive advantage over out-of-state, independent developers of coal-fueled generation facilities, and consequently, the CPUC GHG regulatory scheme offends the Commerce Clause.<sup>15</sup>

2. *The Performance Standard Has an Extraterritorial Effect on Interstate Commerce*

The U.S. Supreme Court has ruled that it is a *per se* violation for one state to regulate conduct in another state. For example, the Supreme Court found in a series of cases that States cannot adopt regulations that tie in-state liquor prices to out-of-state liquor prices.<sup>16</sup> The EPS effectively precludes access to the California market, and its proposed regulations would have a negative effect on out-of-state generators. The Supreme Court has held that a law may have an impermissible extraterritorial scope even when, technically, it applies only to conduct within the state: "The critical inquiry is whether the practical effect of the regulation is to control conduct beyond the boundaries of the State."<sup>17</sup> Here, the Commission's GHG policy cannot avoid having the practical and actual effect of regulating the GHG emissions of out-of-state generators selling into the California market, thus unlawfully controlling commercial conduct beyond the borders of California.

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<sup>15</sup> *Id.*, manuscript at 20-21 (citing Thomas C. Hayes, Bottom-Fishing in the Gas Patch, N.Y. Times, May 19, 1991, at 3 (noting that "without ironclad guarantees for fifteen years or more of supply, lenders have refused to finance the construction of gas-fired power plants for utilities," and likewise, a long-term contract for the output of a power plant is usually required for financing of independent power producers and coal plants)).

<sup>16</sup> *Healy v. Beer Inst.*, 491 U.S. 324, 332 (1989); *Brown-Forman Distillers Corp. v. N.Y. State Liquor Auth.*, 476 U.S. 573 (1986).

<sup>17</sup> *Healy*, 491 U.S. 336; accord *Brown-Forman*, 476 U.S. 583.

In fact, the mere announcement of CPUC's adoption of a GHG cap has already had just such an extraterritorial effect. As noted in two recent newspaper articles, Sempra Energy has halted (or downsized) the development of its Granite Fox power plant near Gerlach, Nevada. As stated by a Sempra spokesperson, California's new regulations forbidding the importation of coal-generated power is the "biggest reason for changing the plant design."<sup>18</sup>

### **C. CONCLUSION**

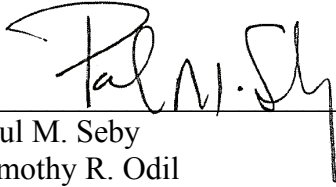
The Commission should not adopt the Final Proposal without significant revision, or at a minimum, additional analysis of the costs of the proposal. In its current form, the Final Proposal (1) sets an unrealistically low GHG emissions standard, (2) eliminates cost containment measures to protect ratepayers, (3) increases California's already high dependence on natural gas to supply its power needs, (4) prohibits a large portion of California's existing out-of-state power suppliers from competing in baseload California power markets, and (5) eliminates or creates disincentives for continued development of cleaner coal-fueled electric generation. In doing so, the proposal contained in the Final Proposal violates the Commerce Clause of the U.S. Constitution.

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<sup>18</sup> Susan Voyles, *Sempra Energy Halts Gerlach Project Study*, Reno Gazette-Journal, March 8, 2006, available at <http://news.rgj.com/apps/pbcs.dll/article?AID=/20060308/NEWS10/603080363/1002>; see also Shayla Ashmore, *Granite Fox Power Plant May Not Happen*, Lassen County Times, March 14, 2006, available at [http://www.lassennews.com/News\\_Story.edi?sid=3184](http://www.lassennews.com/News_Story.edi?sid=3184).

Dated: October 18, 2006

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## **TABLE OF INCORPORATED DOCUMENTS**

1. Evaluation of August 2006 Draft Staff Proposal for California Greenhouse Gas Emissions Performance Standard for Electric Resource Procurement — R.06-04-009  
Filing Date: September 8, 2006
2. Summary: The Linkage of Economic Prosperity and Low-cost Energy to Improved Public Health  
Filing Date: September 8, 2006
3. Brenner Article: Health Benefits of Low-cost Energy: An Econometric Study  
Filing Date: September 8, 2006
4. Summary: Electricity from Coal: Powering Our Energy Future  
Filing Date: September 8, 2006
5. Rose & Wei Paper: The Economic Impacts of Coal Utilization and Displacement in the Continental United States, 2015  
Filing Date: September 8, 2006
6. Supporting Data: Multiplier Impacts of Displacement of Coal-Fueled Electricity  
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7. Balanced Energy Report: Energy Cost Burdens on American Families  
Filing Date: September 8, 2006
8. CEED Comments on the Draft Workshop Report  
Filing Date: September 8, 2006
9. CEED Reply Brief on Jurisdictional and Other Legal Issues  
Filing Date: July 11, 2006
10. CEED Opening Brief on Jurisdictional and Other Legal Issues  
Filing Date: June 30, 2006
11. CEED Pre-Workshop Comments  
Filing Date: June 12, 2006

**CERTIFICATE OF SERVICE**

I hereby certify that I have this day served the foregoing **THE CENTER FOR ENERGY AND ECONOMIC DEVELOPMENT'S OPENING COMMENTS ON FINAL WORKSHOP REPORT** in accordance with the requirements of the Commission Rules of Practice and Procedure by causing a copy to be hand delivered to the CPUC Docket Office and causing electronic service of same on all members of the current service list in this proceeding, R.06-04-009.

Dated: October 18, 2006

  
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